

PRELIMINARY CLOSE OUT REPORT
SOUTHERN MARYLAND WOOD TREATING SITE (SMWT)
HOLLYWOOD, MARYLAND

April 23, 2001

I. INTRODUCTION

This Preliminary Close Out Report documents that the Environmental Protection Agency (EPA), has completed construction activities for the Southern Maryland Wood Treating (SMWT or Site) Superfund Site in accordance with *Close Out Procedures for National Priorities List Sites* (OSWER Directive 9320.2-09A-P). EPA, the Maryland Department of the Environment (MDE), U.S. Army Corp of Engineers (USACE) (construction management), and the IT Group, Inc. (construction contractor) conducted a pre-final inspection on January 17, 2001, and determined that the remedy has been completed in accordance with the remedial design (RD) plans and specifications. EPA and the State have initiated the activities necessary to achieve performance standards and site completion.

The SMWT site has been cleaned to residential standards. In addition to the sampling results of treated soil, groundwater monitoring to date continues to demonstrate that the remedy has been successful. A formal determination of the operational & functional (O&F) success of the remedy will be made in the Final Close Out Report (FCOR). There has been considerable interest in the redevelopment of the SMWT site by various organizations and companies.

II. SUMMARY OF SITE CONDITIONS

Background

The Southern Maryland Wood Treating Site is approximately 25 acres in size and is located on a 96-acre parcel of land approximately one mile north of Hollywood, Maryland. The Site is bounded by residential, agricultural and wooded tracts of land. Storm water and groundwater seepage from the site flow into an east and west tributary which combine to form Old Tom's Run, the discharge from the Site which eventually reaches Breton Bay and the Potomac River.

The facility was owned and operated by the Southern Maryland Wood Treating Company from 1965 to 1978 as a pressure treatment wood preservation business. Creosote and pentachlorophenol (PCP) were used as wood preservatives by the facility. Six unlined lagoons were used for disposal of liquid wastes from the process. As a result of such disposal practices, onsite soils and ground water beneath the lagoons became contaminated. Non-aqueous phase liquids (NAPLs), both light (LNAPLs) and dense (DNAPLs), were found in the subsurface

beneath the lagoons and above the underlying clay layer. Additionally, due to ground water discharge to the onsite pond from the lagoon area, surface water and sediments in the onsite pond and sediments in Old Tom's Run (east and west tributaries) became contaminated. Storage of treated wood onsite resulted in surface soil contamination in the upper site and northeast tank areas (see Figure 1).

Southern Maryland Wood Treating Site Primary Site Features

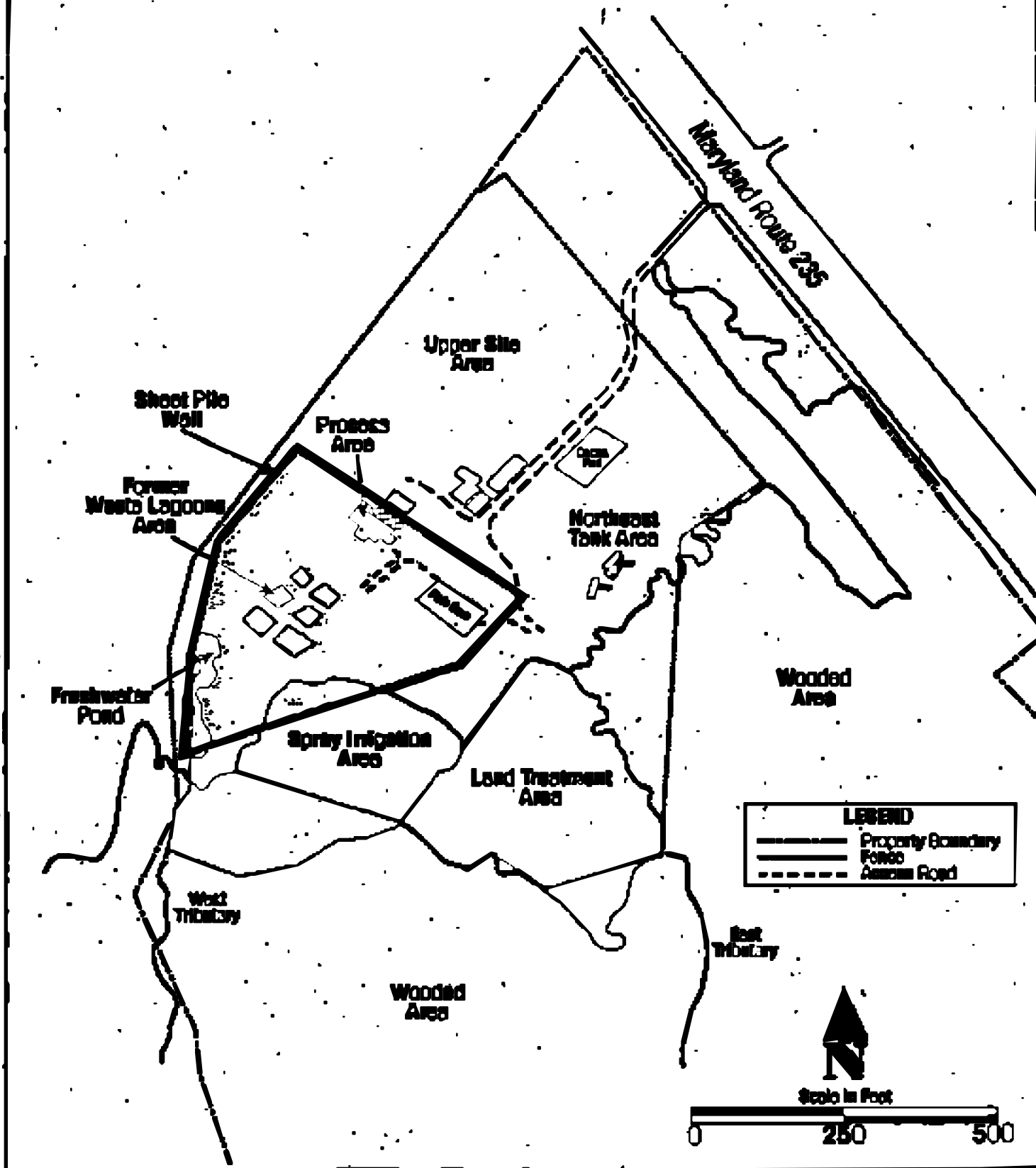


FIGURE 1

On March 14, 1985, EPA initiated its first response action at the Site after the discovery of contaminated material seeping into the onsite freshwater pond. The removal action excavated 1,400 cubic yards of contaminated sediments from the freshwater pond. The sediments were stabilized with cement kiln dust and encapsulated onsite awaiting final treatment. The Site was promulgated on the National Priorities List on June 10, 1986. In 1988, EPA concluded a Remedial Investigation (RI) and Feasibility Study (FS) at the Site. Based on the findings of these studies, EPA issued a Record of Decision (1988 ROD) on June 29, 1988. The 1988 ROD called for the construction of a subsurface barrier wall around the former lagoon area excavation and onsite incineration of contaminated soil and pumping and treatment of contaminated ground water. Local citizens and local government entities expressed opposition to an onsite incinerator. The design work was suspended and EPA proposed to conduct a Focused Feasibility Study (FFS) to reevaluate the remedy for the Site.

On June 29, 1993, a second removal action was initiated to address certain immediate threats to the Site while the FFS was being conducted. This action included the demolition of several buildings that were in danger of collapse; the removal and off-site disposal of liquid and solid waste in numerous tanks and retorts; maintaining the pile of previously excavated and stabilized sediment; the construction of an underflow dam to reduce the amount of contaminated material migrating from the onsite pond into the west tributary stream; the construction of a trench upgradient of the pond to collect contaminated ground water; and, the construction of a water treatment facility. The water treatment plant (WTP-1) became fully operational in 1995.

The Focus Feasibility Study (FFS) was issued in February 1995. Based on the FFS, the EPA issued a Record of Decision on September 8, 1995 (1995 ROD). This 1995 ROD revised the remedy selected in the 1988 ROD from incineration to thermal desorption which the community accepted as the remedy. The objectives in the 1995 ROD were to eliminate contaminants at the Site which served as a source of ground water and surface water contamination and thereby eliminate the risks associated with exposure to contaminated surface water, soil and sediments. The major components of the remedy selected in the 1995 ROD included the following:

- Maintaining perimeter fencing;
- Building demolition;
- Dewatering the containment area;
- Excavating soils and sediments;
- Staging excavated soils and sediments;
- Treating excavated soils and sediments by a thermal desorption process;
- Shipping off-site any grossly contaminated soil and sediment for treatment or disposal;
- Sampling treated soils and sediments to ensure that performance standards have been achieved;

- Backfilling excavated areas with the treated soil; and,
- Pumping and treating of contaminated water.

Remedial Construction Activities

US ACE acting as the Site construction managers initially awarded the construction contract to ICF Kaiser, Inc. On October 7, 1997 work began at the Site in preparation for the upcoming remedial action. Initial preparatory activities included siting and preparing the locations for the new water treatment plant (WTP-2) and for the thermal treatment pad. Clearing and grubbing of other handling and process areas, road building and utilities installation and hook-up. Several buildings that were part of the former wood treatment plant operations were also demolished during this phase.

Installation of the thermal treatment pad area commenced in January 1998. This concrete pad provided a solid surface for construction and operation of the thermal desorption units (TDU). Two pole barns for soil protection from the elements were also constructed adjacent to the TDU pad. A truck scale was installed for weighing dump trucks filled with excavated soils for treatment. A 100,000-gallon modular tank was installed for process water storage to the immediate south of the TDU pad.

In February 1998, the two batch vacuum thermal desorption units (BTDUs) and two continuous thermal desorption units (CTDUs) were mobilized to the Site. Installation activities (mounting, piping, wiring, etc.) for these units and their respective vapor recovery systems began immediately. Operations of the BTDUs commenced with the goal of sustaining the design average throughput rate of 1 ton per hour for each unit. In addition, EPA granted authorization for operation of the CTDUs up to a throughput rate of 12 tons per hour for each unit. Stack sampling provided acceptable results for compliance with air discharge limitations. Sustained 24-hour, 7-day per week operations of the four thermal desorption units (TDUs) began after the satisfactory testing in June 1998.

Operation of the two BTDUs proved problematic. US ACE representatives directed a shutdown of these units in January 1999 due to unsatisfactory performance. The BTDUs were decontaminated and returned to the supplier. Soil blending activities were refined and expanded in order to make wetter, more contaminated Site soils amenable to treatment in the CTDUs. Requirements for the thermal desorption system for use at the Site were a treatment temperature of 900 degrees Fahrenheit at a retention time of approximately 15 minutes in order to desorb contaminants from the soils and sediments. The desorbed contaminants were condensed and collected for further treatment or disposal. Air emissions from the thermal desorber complied with the substantive requirements of Maryland regulations governing air pollutants and air quality for volatile organic compounds (VOCs).

The main portion of the Site was divided into five contamination source areas and thereby

designated as Pit 1, 2, 3, 4, and 5. The excavation and treatment of soil in each designated pit continued until no more contamination was found. The extent of contamination was determined based on the soil sample results of an onsite laboratory. Once soil sample results from the excavation hole came back clean from the onsite laboratory a confirmation sample was sent to an outside laboratory. US ACE personnel maintained an ongoing tracking system for the verification of excavation pits throughout the project and ensured achievement of the appropriate cleanup levels in all excavated source pits.

The ground water treatment system at the Site consisted of two systems, the original water treatment plant, designated as WTP-1, placed in operation in 1995 for the treatment of surface waters from Pit 4, and the new ground water treatment system, designated as WTP-2, constructed for the treatment of thermal desorption condensate water. Construction of WTP-2 was completed in March of 1998, and a successful Proof of Performance Test was completed in April 1998. Components of the WTP-2 treatment system consisted of settling tanks, oil/water separation, chemical addition and mixing, inclined plate clarification, sand filtration, sludge dewatering, ultraviolet oxidation technology, pH adjustment and activated carbon treatment.

Pit 4 dewatering activities began in February 1999. Extracted water was pumped through an oil/water separator and a settling tank and was then pumped to either WTP-1 or WTP-2 for processing. Dewatering activities continued through the summer of 1999. On September 16, 1999, Hurricane Floyd dumped 17 inches of rain onto the Site, flooding Pit 4 with approximately 2 million gallons of rainwater and significantly undermining all de-watering progress made up to that point. Removal of the hurricane water from Pit 4 was accomplished gradually over the next few months using a new mobile water treatment system, designated WTP-3.

Beginning in February 2000, excavation activities in the small tributary stream that receives storm water runoff from Pit 4 commenced. Sampling activities detected pockets of contamination within the stream sediment. Excavation activities were undertaken with the minimal impact necessary for adequate removal of affected sediments. In total, approximately 500 tons of contaminated sediment was removed from the stream area. Restoration activities followed the removal action and were completed in September 2000.

Soil treatment operations ceased on October 6, 2000 after treating approximately 270,600 tons of contaminated soils and sediments. After thermal treatment operations ceased in October 2000, demobilization activities commenced with the dismantling of the CTDU units and then WTP-2. WTP-3 was reconfigured for equipment decontamination water treatment and moved adjacent to the thermal treatment pad to permit the shutdown and breakdown of WTP-2. US ACE secured bids from TCI Incorporated and Kumera Corporation for the purchase of CTDU 1 and 2, respectfully. The CTDUs were shipped off-site by the respective new owners after

cleaning and breakdown operations were completed.

Backfill of staged treated soils continued until the proper grading was achieved. Final Site grades were roughly based on initial Site contours with minor adjustments for the slightly increased amount of fill material (due to swell factor) and for aesthetic purposes. Prior to seeding, two inches of LeafGro organic leaf mulch material was tilled into the upper six inches of soil as an amendment to encourage vegetative growth. The prescribed EPA seed mix was placed via a hydroseed machine along with straw and a paper pulp tacking media. Nylon netting was placed as needed in areas of concern to help prevent erosion.

Site perimeter fencing was repaired as necessary. Utilities were cut back to the main supply panel. The on-site production well remains operational in case watering is required to promote vegetative growth. A gravel roadway traversing the Site remains to allow access to the monitoring wells.

A pre-final inspection was conducted on January 17, 2001 with EPA, MDE, US ACE, and IT Group. The minor “punch list” items from that inspection do not affect the performance of the remedy. The items are as follows:

1. place brass padlocks on the metal access cap of the site production well to help safeguard against vandalism;
2. repair damaged silt fencing near the LeafGro storage piles in the vicinity of the former decontamination pad area;
3. place straw and perform hand repairs of erosion damage areas in Pits 1 and 4;
4. stabilize soils with straw and complete seeding operations in the remaining unseeded areas once weather conditions permit;
5. abandon site water production well once watering of seeded areas is complete; and,
6. perform final removal of site utilities once they are no longer needed.

The remediation has left the Site cleaned to residential standards. Groundwater monitoring to date has reflected that the remedy has been successful.

III. DEMONSTRATION OF CLEANUP ACTIVITY QUALITY ASSURANCE AND QUALITY CONTROL

Activities at the Site were consistent with the ROD and the RD. EPA and State quality assurance/quality control (QA/QC) procedures were followed during construction and sampling activities. As directed by EPA, construction and sampling activities were overseen by US ACE

and verified to conform with the RD/RA documents. Representatives from US ACE were on site during the entire construction period and continually inspected the various elements of construction. US ACE provided suggestions and advice to the contractor regarding sampling methods, construction methods, and health & safety. The EPA Remedial Project Manager (RPM) and MDE representatives visited the Site to review construction progress and evaluate and review the results of QA/QC activities. In addition, IT Group, Inc. and their subcontractors performed random and routine inspections of the construction activities at the Site.

One hundred percent (100%) of the treated Site soils were cleaned to the required performance standards. The 1995 ROD established the soil clean-up levels of 0.1 ppm Benzo (a) Pyrene (B(a)P) equivalent for surface soils (within two feet of the surface) and 1.0 ppm B(a)P equivalent for subsurface soils (below two feet from the surface). However, during the remedial action data showed that in areas where the site was below the Benzo (a) Pyrene (B(a)P) clean-up levels there were still high levels of pentachlorophenol (PCP) in the soil. To assure that the soil in these areas was treated, a non-significant change to the 1995 ROD was issued March 5, 1999. This non-significant change established a cleanup level of 5.0 ppm PCP. In addition, another non-significant change was the use of treated soils from the site as backfill below the water table. These treated soils were required to meet a clean-up level of 1.7 ppm PCP. This change from the 1995 ROD was documented in the "Site Specific Work Plan," dated July 1997 and the Public Meeting minutes of November 7, 1996.

Processed soils were staged in temporary holding bins after processing. Each bin held approximately 700 tons of processed soil. Each bin was sampled in accordance with the *Sampling and Analysis Plan for Remedial Activities (SAP)*, June 1998, and the *Quality Assurance Project Plan (QAPP)*, May 1998, to verify that clean-up levels were achieved.

In accordance with the *SAP* and *QAPP*, all excavation sidewalls and floors were sampled for attainment of the appropriate cleanup level (either subsurface clean or surface clean). An onsite laboratory was used to determine extent of contamination during the excavation process. If verification sample results indicated an exceedence of the cleanup criteria, excavation activities continued as needed to achieve the cleanup goals. Once soil samples were found to be clean in the excavation a confirmation sample was sent to an outside laboratory. US ACE personnel maintained an ongoing tracking system for the verification of excavation pits throughout the project and ensured achievement of the appropriate cleanup levels in all excavated source pits.

IV. ACTIVITIES AND SCHEDULE FOR SITE COMPLETION

The following table identifies the schedule of activities remaining

Task	Estimated Completion	Responsible Organization
Complete Punch List Items	05/01/01	IT Group
Remedial Action Completion Report	06/29/01	US ACE
Groundwater Monitoring	01/17/02	EPA
Determine Remedy O&F	01/17/02	EPA
Approve Final Close Out Report (FCOR)	01/17/02	EPA/MDE
Five-Year Review Report	09/30/04	EPA
Site Deletion from NPL	12/25/04	EPA/MDE

V. SUMMARY OF REMEDIATION COSTS

The following costs are preliminary because there are several significant pending or potential modifications to the remedial action contract.

The total project costs including both remedial design and remedial action are summarized as follows:

	Estimate at Completion
Remedial Design	\$1,022,044
RA Contract Costs (estimated)	\$48,163,813
RA Contract Total Equipment Capital Costs	\$8,193,616
Total US ACE RA Costs (estimated)	\$3,841,000
Post remediation ground water monitoring	\$200,000
Post remediation Site maintenance	\$80,000
Sub-total	\$61,500,473
Revenue from sale of Government property	(\$460,000)
Total Project Cost (estimated)	\$61,040,473

The 1995 ROD estimate for the remedial action was \$31,000,000 for the treatment of 145,000 tons of contaminated material. However due to greater than anticipated soil contamination the estimate at construction completion is \$61,040,473 for the treatment of 270,600 tons of contaminated material. The cost per ton estimate at completion is \$218/ton which is within 3 percent of the 1995 ROD estimate of \$214/ton. An Explanation of Significant Differences (ESD) will be completed to document the additional quantities of contaminated soil which was treated and the associated cost increases.

VI. FIVE-YEAR REVIEW

The 1995 ROD stated that because the selected remedy may not allow for unlimited use of and unrestricted exposure to the Site within five years of the initiation of the remedial action, a policy review of the Site will be conducted within five years of the completion of the physical construction of the remedial action. Such review shall be conducted in accordance with EPA guidance set forth in Structure and Components of Five-Year Reviews, May 23,1991, OSWER Directive 9355.7-02 and Supplemental Five-Year Review Guidance, OSWER Directive 9355.7-02A, to ensure that the remedy continues to provide adequate protection to human health and the environment.

A five-year review of the site was conducted on September 30, 1999. Since construction was still underway the remedy was at that time determined not to be protective. EPA plans to conduct the next five-year review no later than 2004. The next five-year review is expected to be the final review, as implementation of the remedy selected for this site will result in a clean

closure.

_____/s/_____
Abraham Ferdas, Director
Hazardous Site Cleanup Division

April 23, 2001
Date